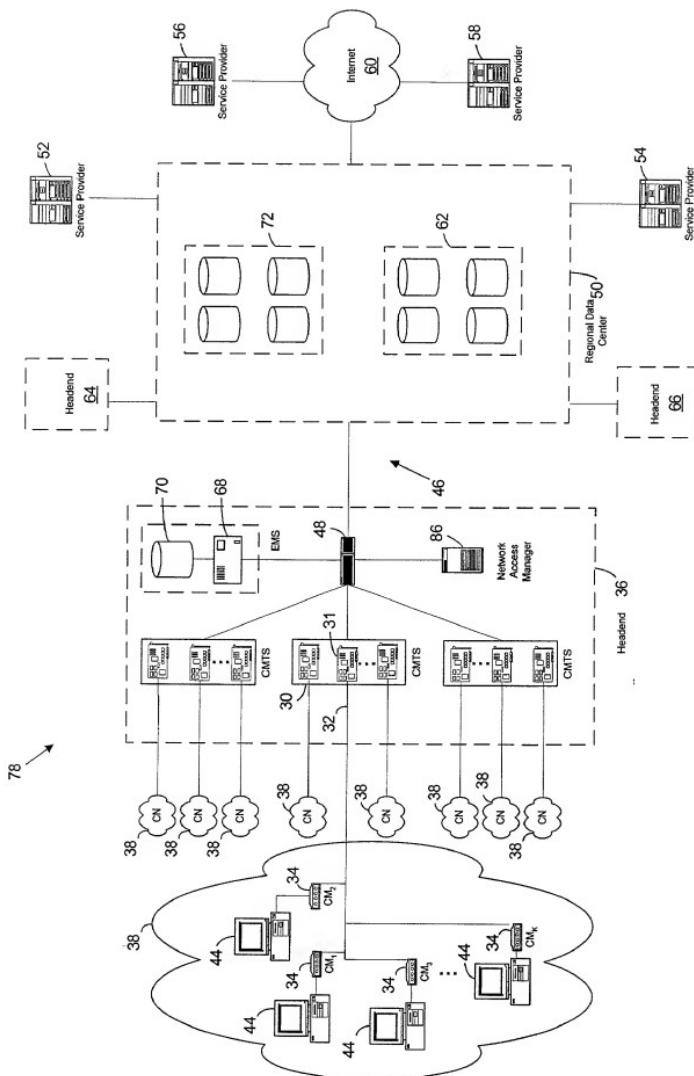
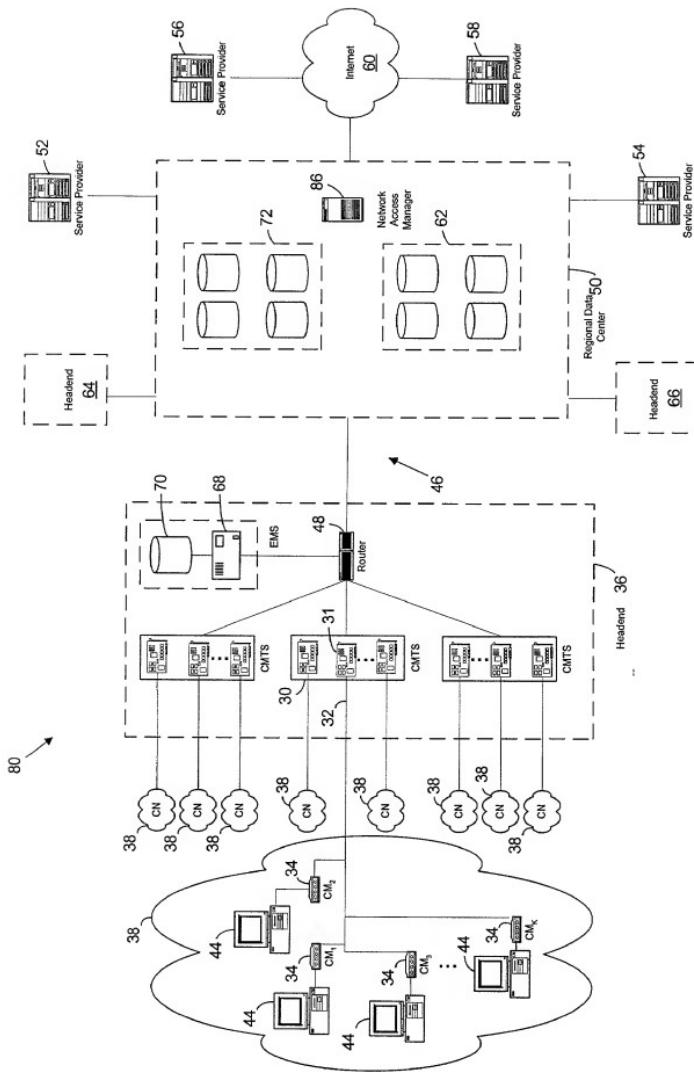


FIG. 1  
(Prior Art)

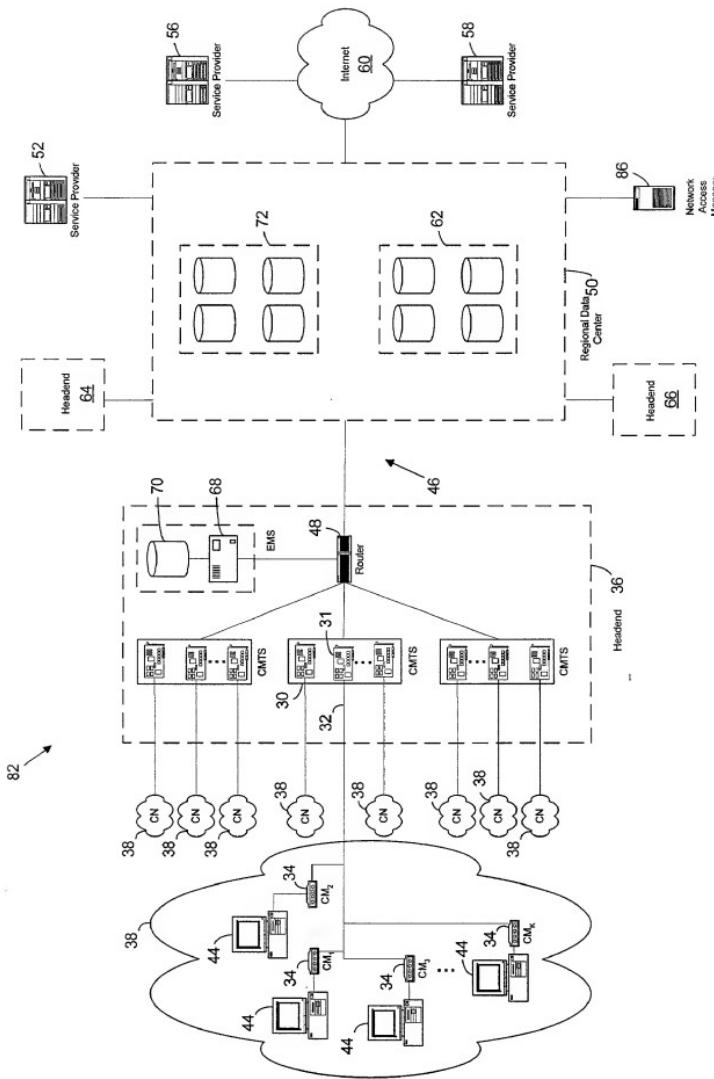
**FIG. 2**



**FIG. 3**



**FIG. 4**



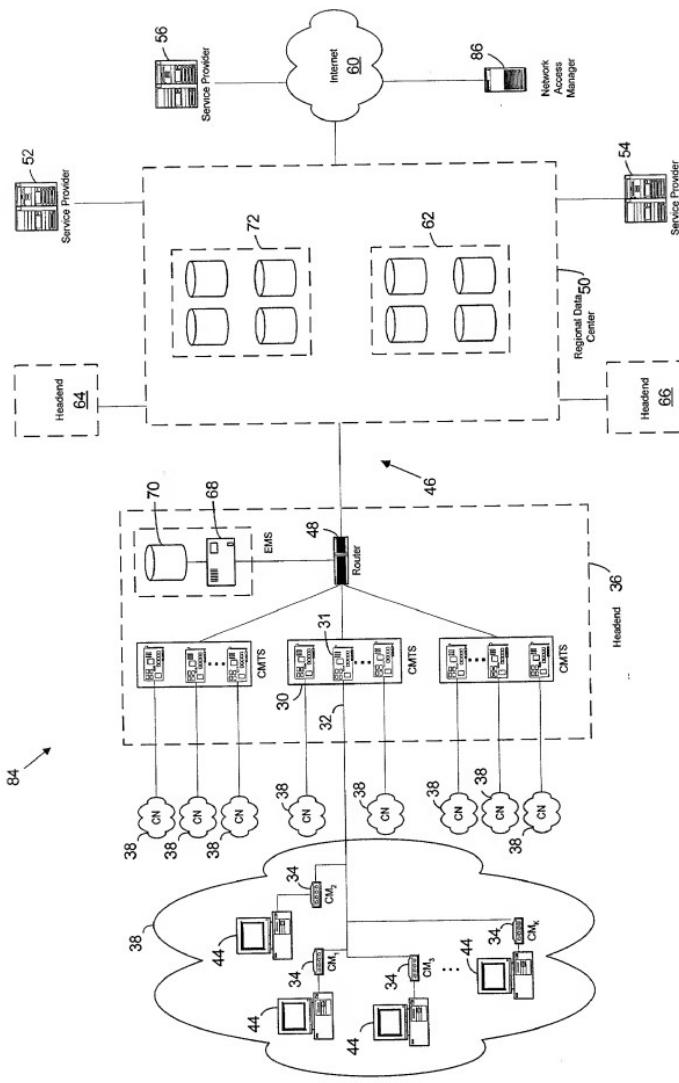
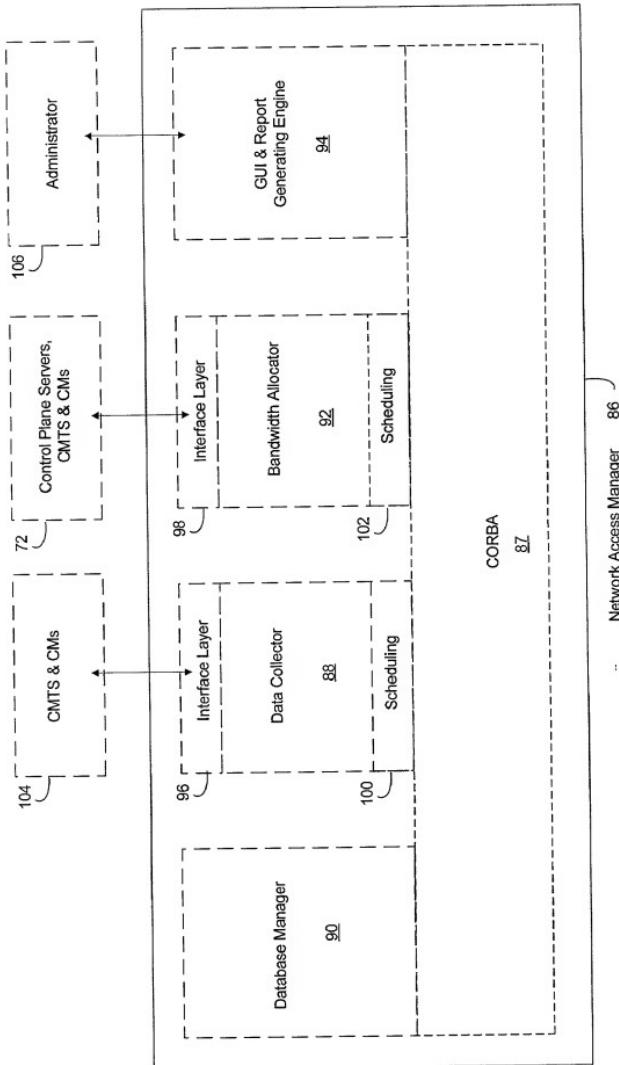
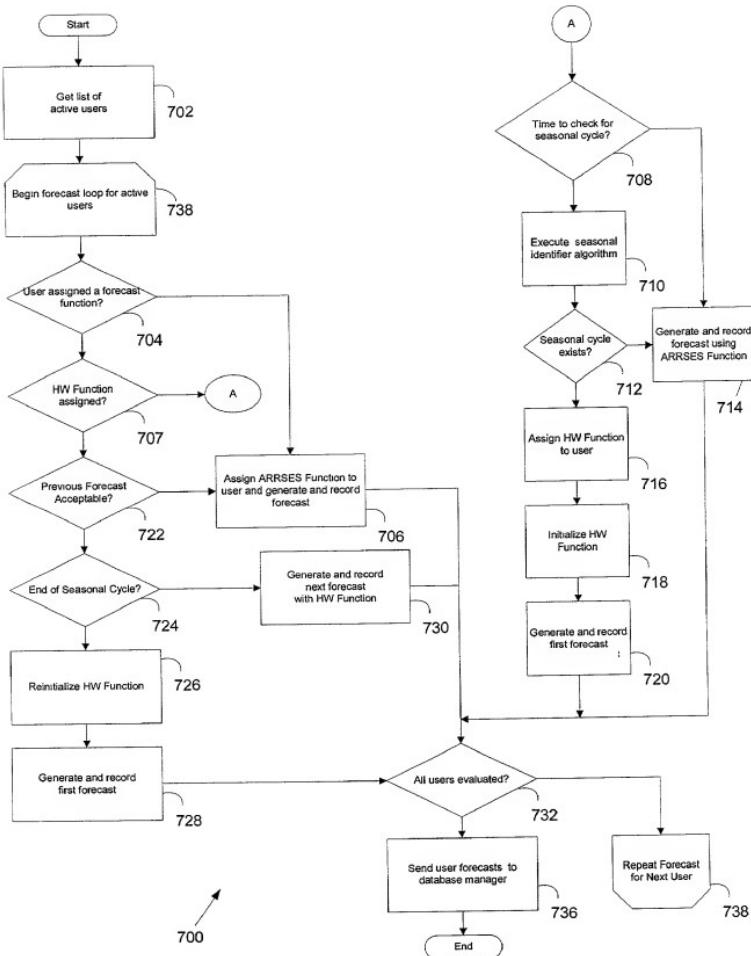
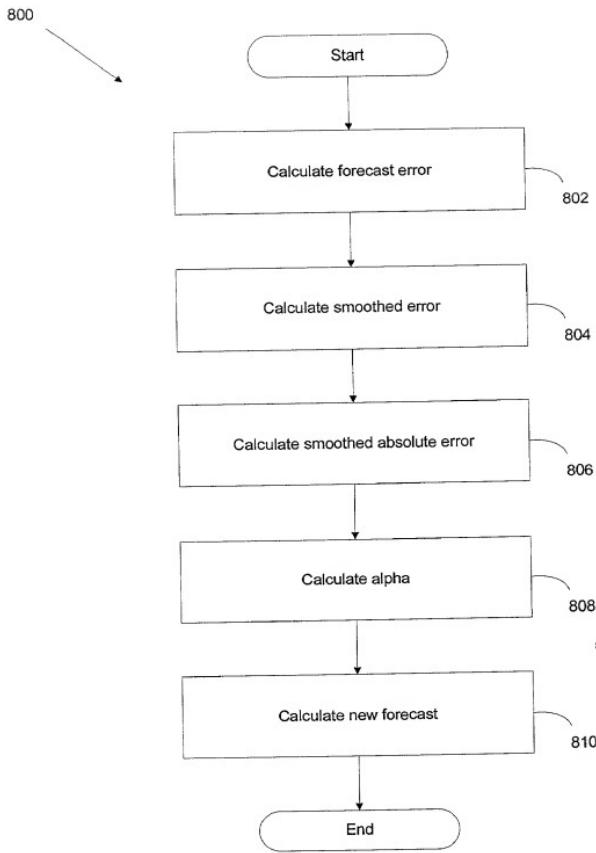


FIG. 5

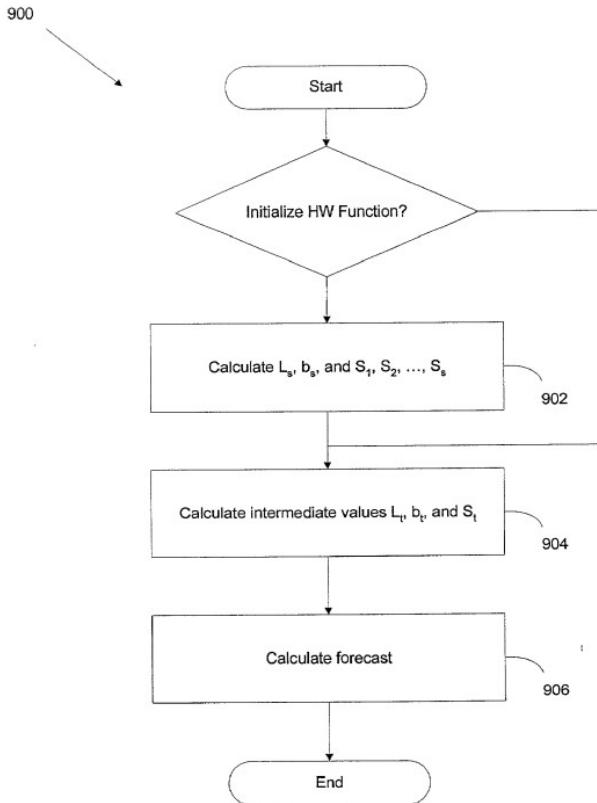
**FIG. 6**



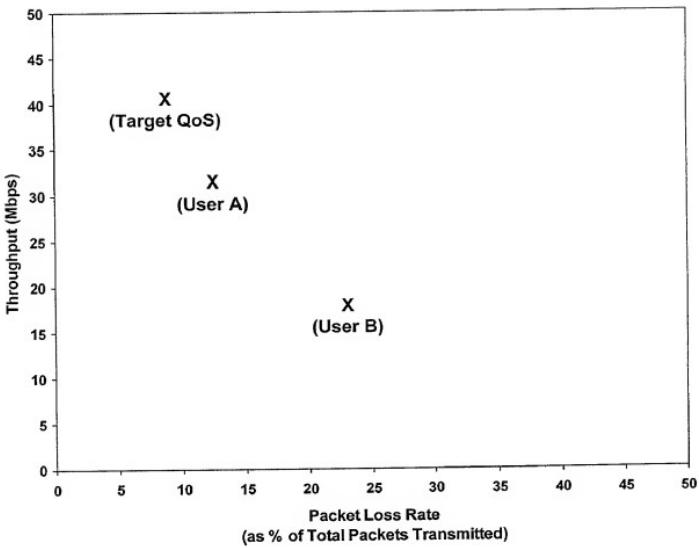
**FIG. 7**

**FIG. 8**

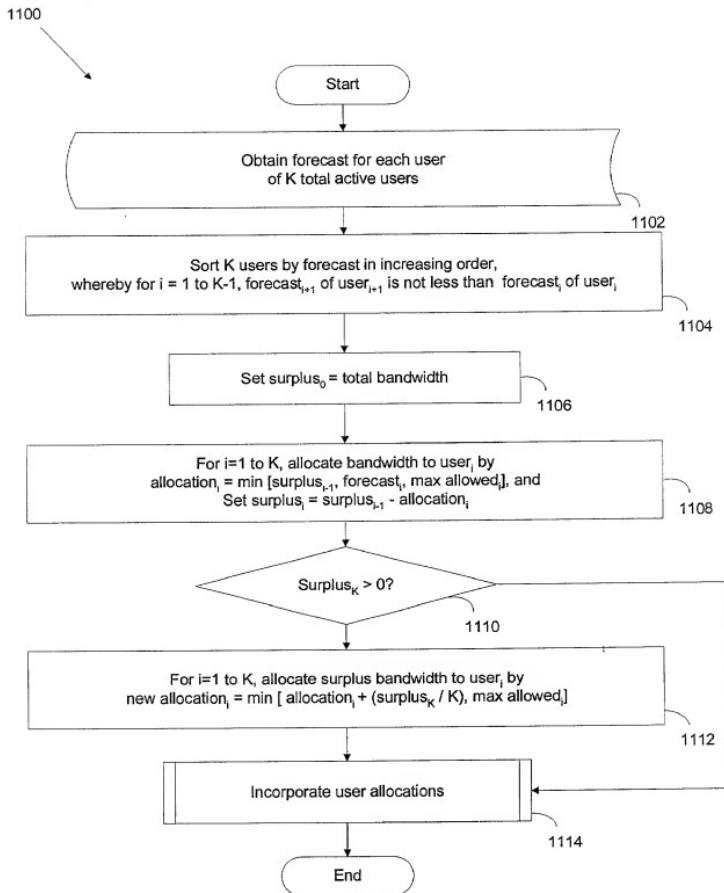
900  
902  
904  
906



**FIG. 9**



**FIG. 10**



**FIG. 11**

1200  
↓  
Start

Obtain forecast for each user  
of K total active users K

Sort K users by forecast in increasing order,  
whereby for  $i = 1$  to  $K-1$ ,  $\text{forecast}_{i+1}$  of user $_{i+1}$  is not less than  $\text{forecast}_i$  of user $_i$

Set  $\text{surplus}_0 = \text{total bandwidth}$   
set  $\text{sum}_0 = 0$

For  $i=1$  to  $K$ , allocate bandwidth to user $_i$  by  
 $\text{allocation}_i = \min [\text{surplus}_{i-1}, \text{forecast}_i, \text{max allowed}]$ ,  
 $\text{surplus}_i = \text{surplus}_{i-1} - \text{allocation}_i$ , and  
 $\text{sum}_i = \text{sum}_{i-1} + \text{allocation}_i$

Surplus $_K > 0$ ?

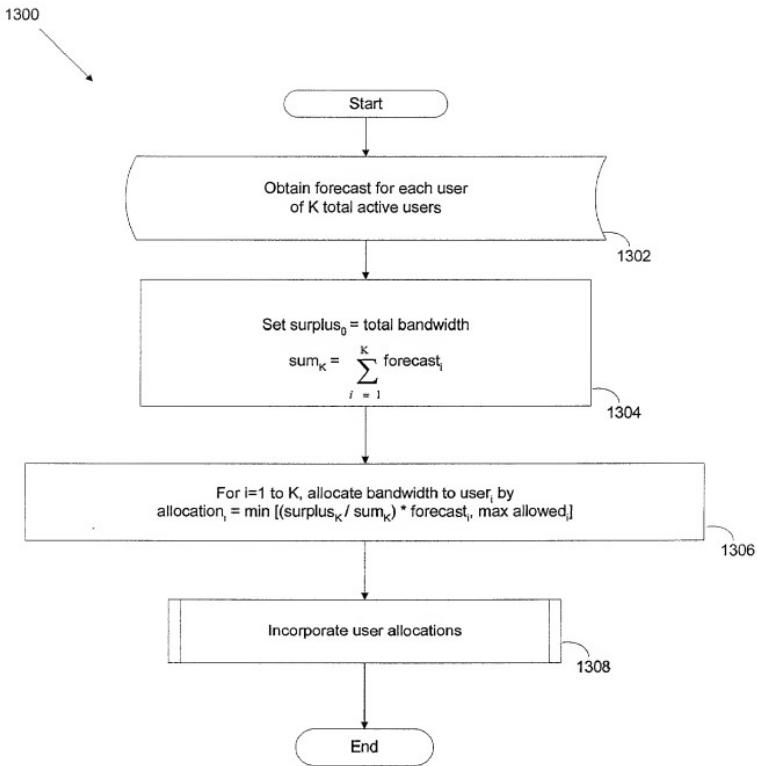
For  $i=1$  to  $K$ , allocate surplus bandwidth to user $_i$  by  
 $\text{new allocation}_i = \min [\text{allocation}_i * (1 + \text{surplus}_K / \text{sum}_K), \text{max allowed}]$

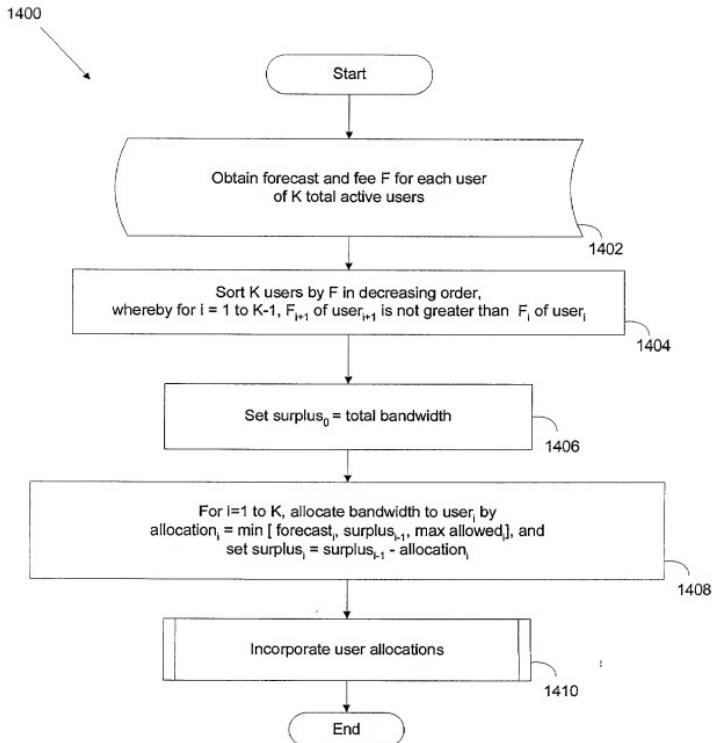
Incorporate user allocations

End

1202  
↑

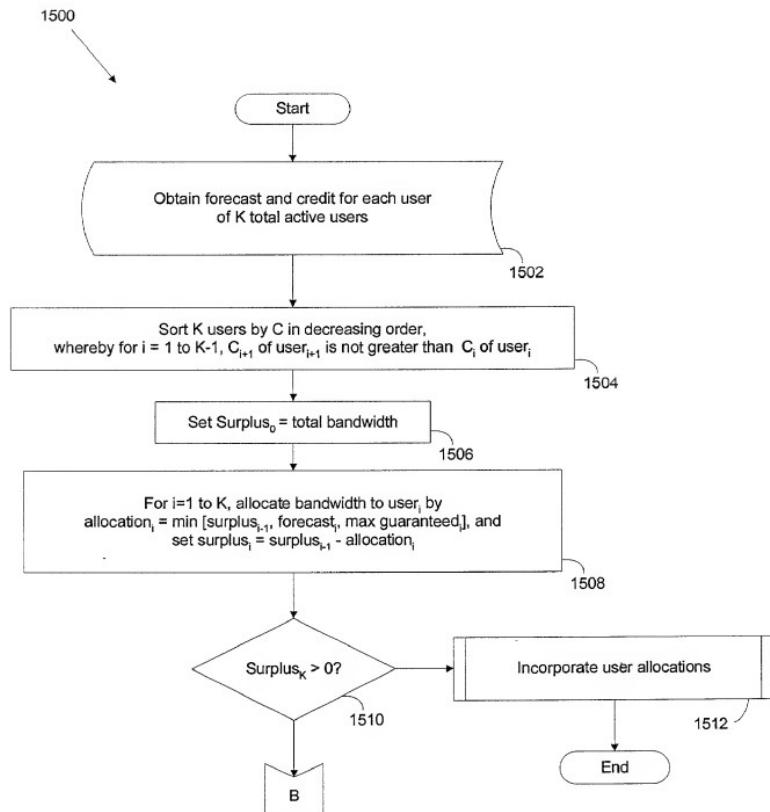
FIG. 12

**FIG. 13**



**FIG. 14**

1500  
1502  
1504  
1506  
1508  
1510  
1512



**FIG. 15a**

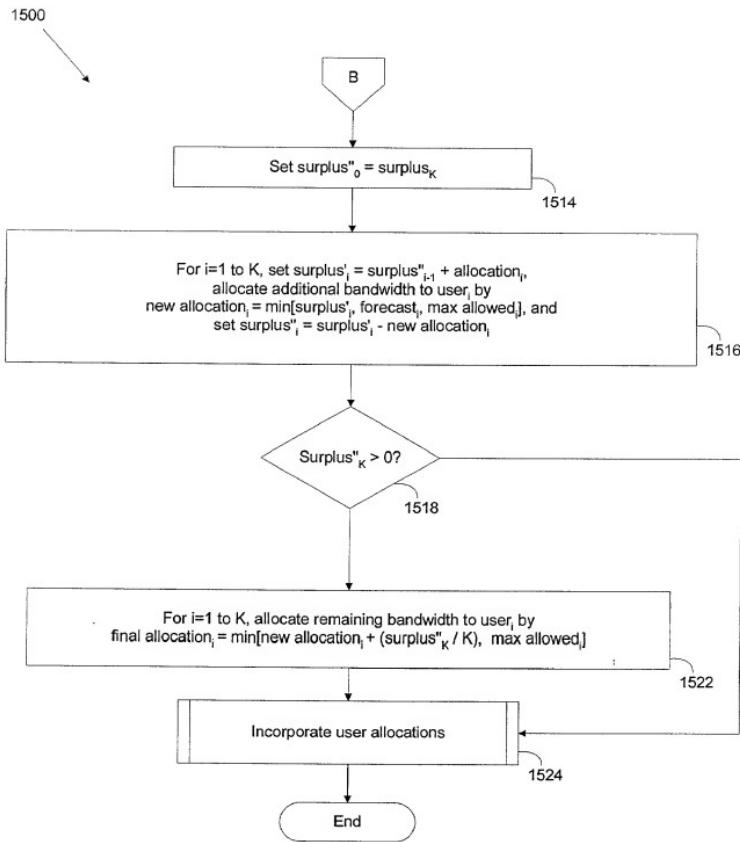


FIG. 15b

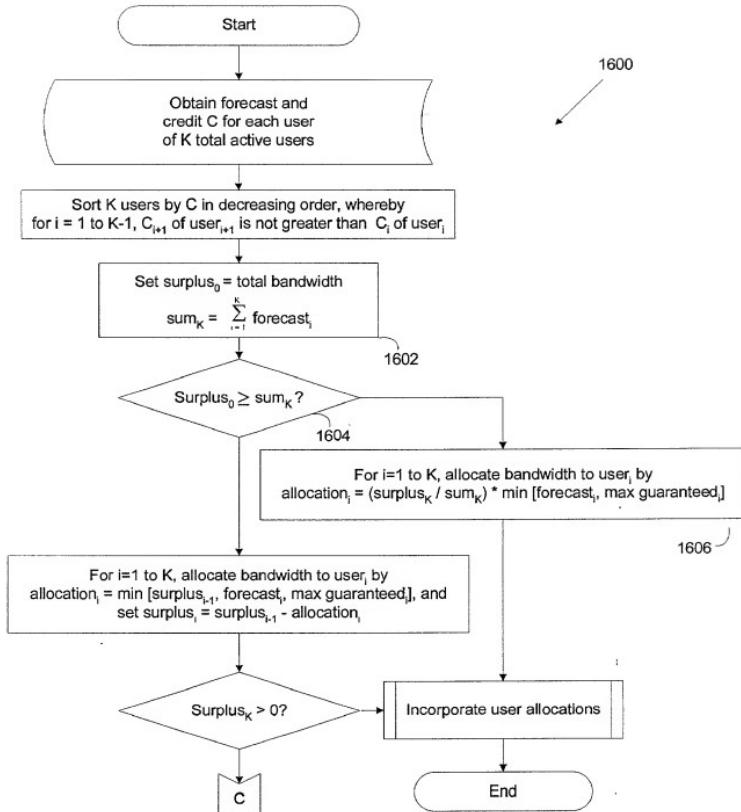
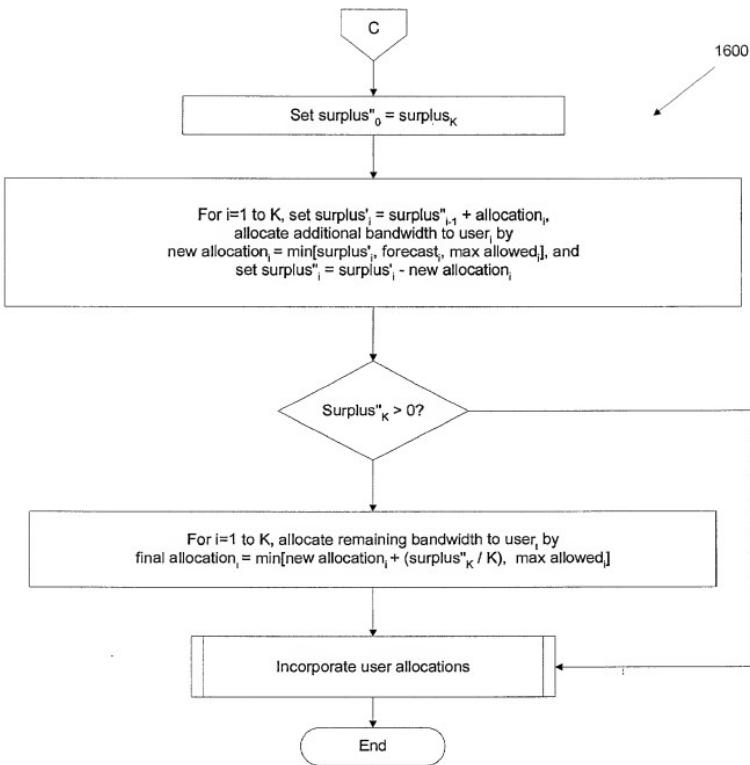
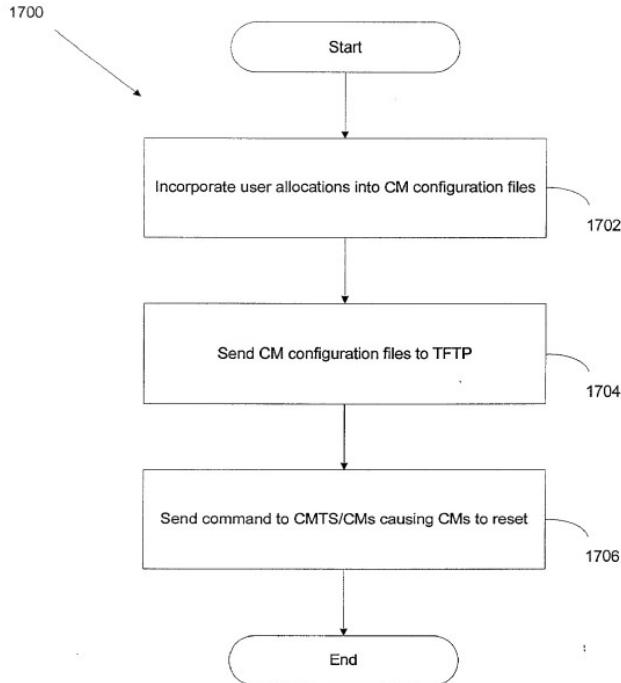


FIG. 16a



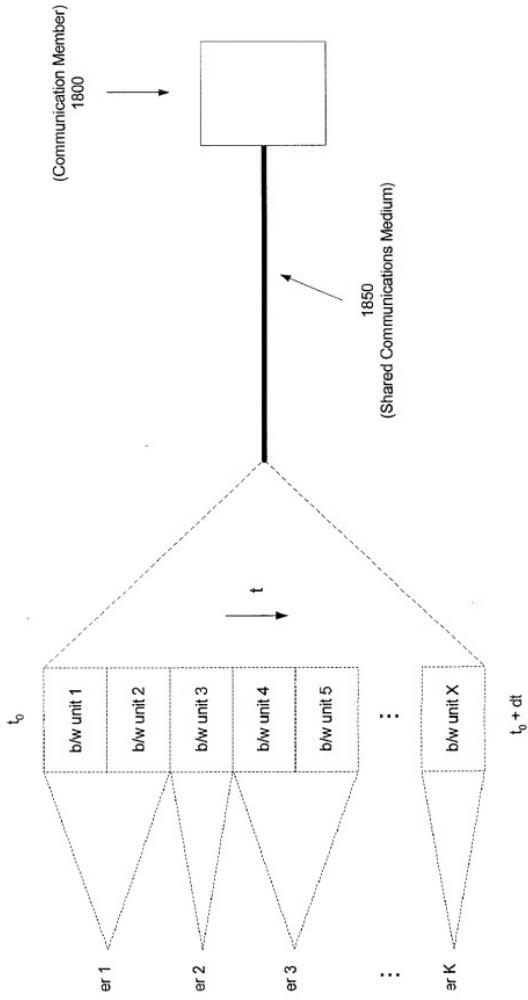
**FIG. 16b**

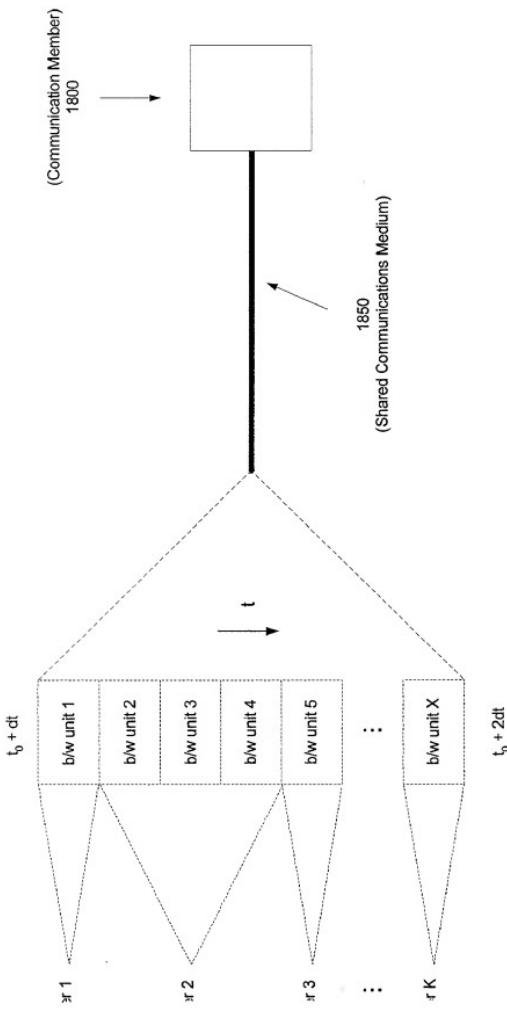
1700  
1702  
1704  
1706



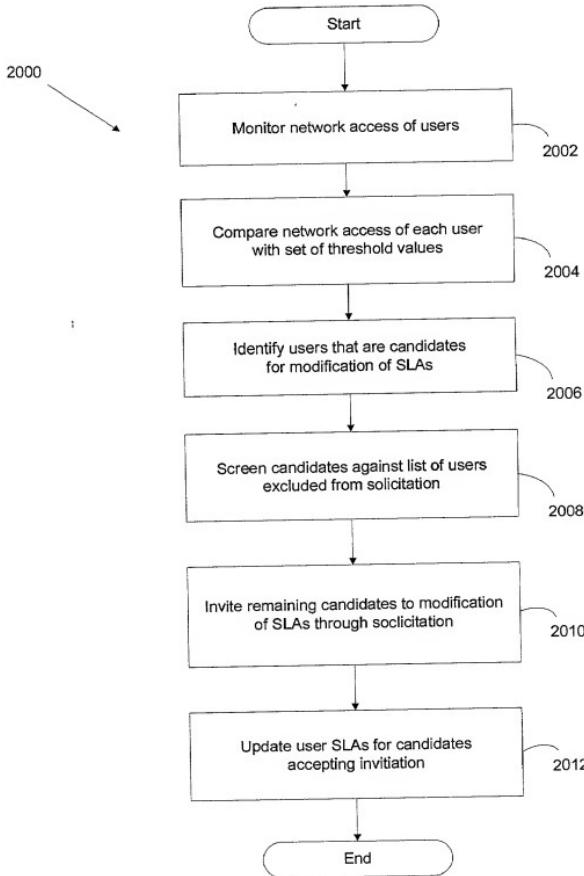
**FIG. 17**

**FIG. 18**





**FIG. 19**

**FIG. 20**